## WHAT IS CLAIMED IS

- 1. A magnetic core composition for an xDSL modem transformer having a main component comprised of MnO: 22.0 to 34.5 mol% and ZnO: 12.0 to 25.0 mol% and the rest of substantially  $\rm Fe_2O_3$ .
- 2. The magnetic core composition for an xDSL modem transformer as set forth in claim 1, having a main component comprised of MnO: 23 to 33 mol% and ZnO: 13 to 24 mol% and the rest of substantially  $Fe_2O_3$ .
- 3. The magnetic core composition for an xDSL modem transformer as set forth in claim 1, having a main component comprised of MnO: 23.8 to 24.2 mol%, ZnO: 23.0 to 23.4 mol%, and  $\rm Fe_2O_3$ : 52.6 to 53.0 mol%.
- 4. The magnetic core composition for an xDSL modem transformer as set forth in claim 1, having a main component comprised of MnO: 26.1 to 26.5 mol%, ZnO: 20.1 to 20.5 mol%, and  $Fe_2O_3$ : 53.2 to 53.6 mol%.
- 5. The magnetic core composition for an xDSL modem transformer as set forth in claim 1, having a main component comprised of MnO: 23.0 to 23.4 mol%, ZnO: 23.4 to 23.8 mol%, and  $Fe_2O_3$ : 53.0 to 53.4 mol%.
- 6. A magnetic core for an xDSL modem transformer having a main component comprised of MnO: 22.0 to 34.5 mol% and ZnO: 12.0 to 25.0 mol% and the rest of substantially  $Fe_2O_3$ .
- 7. The magnetic core for an xDSL modem transformer as set forth in claim 6, having a main component comprised of MnO: 23 to 33 mol% and ZnO: 13 to 24 mol% and the rest of substantially Fe $_2$ O $_3$ .
- 8. The magnetic core for an xDSL modem transformer as set forth in claim 6, having a main component comprised of MnO: 23.8 to 24.2 mol%, ZnO: 23.0 to 23.4 mol%, and  $Fe_2O_3$ : 52.6 to 53.0 mol%.
- 9. The magnetic core for an xDSL modem transformer as set forth in claim 6, having a main component comprised of MnO: 26.1 to 26.5 mol%, ZnO: 20.1 to 20.5 mol%, and  $Fe_2O_3$ : 53.2

to 53.6 mol%.

- 10. The magnetic core for an xDSL modem transformer as set forth in claim 6, having a main component comprised of MnO: 23.0 to 23.4 mol%, ZnO: 23.4 to 23.8 mol%, and  $Fe_2O_3$ : 53.0 to 53.4 mol%.
  - 11. A magnetic core for a transformer comprising a bottom plate,

a columnar center leg rising from an approximate center of said bottom plate in a first direction, and

an outer leg rising from said bottom plate surrounding at least the two sides of the center leg in the first direction separated by a predetermined space,

a height of the center leg being lower than a height of said outer leg by exactly a predetermined gap and a through gap of substantially the same height as the height of the center leg being formed at part of the top of said outer leg.

12. The magnetic core for a transformer as set forth in claim 11, having a main component comprised of MnO: 22.0 to 34.5 mol% and ZnO: 12.0 to 25.0 mol% and the rest of substantially Fe<sub>2</sub>O<sub>3</sub>.